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記山东、浙江两个鱉类化石

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1962 年夏，古脊椎动物与古人类研究所分别收到地质部石油地质局和浙江省地質局地質研究所古生物室寄来两件鱉类化石标本。这两件标本虽然保存都不完整，但它們代表鱉类（trionychids）化石在該两地区的首次发現，故簡单記述如下。

笔者对上述两单位的負責同志将他們发現的标本寄与我所研究，刘宪亭先生对本文提出宝貴意見，杜治同志攝制象片，表示感謝。

1. 山东临朐的鱉化石

? *Amyda linchuensis*, sp. nov.

本种仅由部分背甲为代表，标本包括右边第一、二、三块肋板，第一、二块椎板，右前烏喙骨，以及破碎的部分头骨（V. 1050）。据寄送单位的野外标籤所記，标本采自山东临朐牛山油頁岩中，但标本上所附的岩石为灰色泥岩，可能它是油頁岩层中的某一夾层。

标本上各骨板都紧密縫合。完整背甲估計原寬約 165 毫米。无前椎板；第一、二椎板都成短側边朝后的六角形，前者长 30 毫米，后緣寬 15.5 毫米；后者长 21.5 毫米，后緣寬 14 毫米。第二椎板的长度仅为第一椎板的 70% 左右。肋板仅右侧前 3 块保存，第一块內长外短，左右寬 57 毫米；第二块与其相反，內短外长，左右寬 73 毫米；第三块的外端稍有破損，但可看出它为內短外长，左右寬約 77 毫米。所有这些保存的椎板和肋板上皆无稜嵴紋飾，但滿布凹斑。凹斑以椎板和肋板近端部分的为大，每 10 毫米长度間約有 3 个，往外則較細小，每 10 毫米长度間約 4 个。肋板外边緣部分无凹斑，成一寬約 4 毫米的平滑环带。肋条仅右側第一、二条保存，第三条只有印痕为代表。所有这些肋条都甚寬扁，并甚突出于肋板边緣之外。第一肋寬 18 毫米，突出肋板之外 21.5 毫米；第二肋寬 14 毫米，突出肋板之外 28.5 毫米；第三肋的寬度与第二肋相同，但突出尺度更大，估計在30毫米以上。頸板沒有保存，但从第一椎板和第一肋板前緣的构造观察，頸板可能甚狹，左右或只延伸到第一肋板內端的約 1/4 处，估計其横寬可能少于背甲整个寬度的 1/2 。头骨仅額骨、頂骨和上枕骨保存，其构造和一般鱉类无异。右前烏喙骨因頸板破缺而外露，稍受挤压，长 52 毫米，远端部分甚为扩张，寬 16 毫米。

上述鱉类化石因为沒有前椎板，显然不归 *Aspideretes* 屬。但因其后部肋板沒有保存，未知具有 8 对或 7 对肋板，因而难于肯定应归 *Amyda* 属或 *Platypeltis* 属。但就其背甲的一般构造观察，并結合这两属动物的一般地理分布情况考虑，笔者訒为暫且将它归入 *Amyda* 属較为合适。

关于 *Amyda* 屬的化石种类，我国曾記述过 3 种，即內蒙始新世晚期的 *A. johnsoni*

和漸新世中期的 *A. gregaria*，以及山西丁村更新世的 *A. sinensis*（現生种）的碎片。山东的新标本就其一般性質來說，与前者比較近似，特别是凹斑紋飾的构造。但前者的个体甚大，据原文記載，其背甲的最大寬度为 390 毫米，比新标本大一倍多。笔者認为，根据山东的鱉类化石的上述特征，可以另外訂立一新种，今以其产地为名，命名为临朐鱉（?*Amyda linchuensis*）。

1961 年，程政武曾記述过一新种无盾龟（山东无盾龟，*Anosteira shantungensis*），其产地也为山东临朐牛山。該标本上所附的岩性与我們标本上所見的相似，两者甚有可能产自同一地层，其时代均为始新世晚期或漸新世早期。

2. 浙江兰溪的鱉化石

***Amyda* sp.**

这是一件很小的鱉类标本，包括背甲的大部肋板和第五、六、七块椎板（V.1051）。这些骨板原来都是离散的，經拼連后則如图版 I, 2 所示。从标本的个体大小，各骨板間疏松的縫合綫，以及非常突出于肋板边緣之外的肋条等特征观察，浙江标本显然代表一个相当年幼的个体。

背甲估計长約 54 毫米，寬（不包括肋条的外突部分）41 毫米，外形呈卵圓形。肋条末端非常突出，其突出部分的长度一般都仅小于其相应肋板的左右寬度，但第一、七肋的則与其相等，第八肋的竟大于其肋板寬度。椎板仅第五、六、七块保存，都呈短側边朝前的六角形，其中第五、六块較寬短，第七块則狹长，并由前往后寬度显著縮小。第八块椎板虽沒保存，但从左边第八块肋板的构造观察，表示应該还有一块較小的第八块椎板存在，部分地或全部地将左右第八块肋板在中綫处隔开。除肋板边緣外，所有保存的骨板的表面上皆滿布細小的凹斑紋飾，并还有不規則的断續的稜嵴紋飾（見图版 I, 3）。

关于 *Amyda* 属的幼体化石，計尔摩（C. W. Gilmore, 1934）曾記述过內蒙二連附近漸新世中期的簇鱉（*A. gregaria*）。在他那批材料中，不仅有幼年个体的代表，并也有成年个体的代表。据称，幼年个体所示的某些构造特征和成年个体的差别甚大，它們主要表現在頸板构造、背腹甲的連接关系、以及腹甲的某些骨板构造上。浙江标本因为保存不全，不能与其全面对比，但至少可以看出其第七块椎板較狹长，第七、八对肋板按比例較大等差别来。一般說来，浙江标本与我国最常見的中国鱉（*A. sinensis*）最为近似，但与其幼年个体比較，它們的第一肋板的前緣构造又似不同。虽然，我們的标本很可能代表鱉属中的另一新种，但考虑到目前所获得的只是一个不完整的幼年背甲，其所表現的特征很可能与其成年个体的不同，为避免混乱，故暫不另訂新名，而待以后成年个体材料的补充。

据野外記录称，浙江的鱉化石产自衢江紅砂岩中，但沒說明具体层位。关于衢江紅砂岩的地質时代，一直都被籠統称为第三紀。根据这件鱉化石的一般性質观察，笔者認为，可以把出产化石的地层时代考虑为始新-漸新世。

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NOTE ON TWO FOSSIL TRIONYCHID TURTLES FROM SHANTUNG AND CHEKIANG

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(Summary)

This note gives a brief description of two fossil trionychid turtles collected from Niushan, Linchu, Shantung and Lanhsi, Chekiang, and sent respectively to the Institute of Vertebrate Palaeontology and Palaeoanthropology for determination by the Ministry of Geology and the Bureau of Geology, Chekiang in Summer, 1962. Although the two specimens are broken, they are somewhat interesting still in palaeontology and represented the first occurrence of soft-shelled turtle in these two provinces.

1. Specimen from Shantung

?*Amyda linchuensis* sp. nov.

The new species is indicated by an anterior portion of carapace including the 1st, 2nd and 3rd costal plates of right side, the first two neurals, the right precoracoid, and part of the broken skull. Cat. No. of IVPP V.1050.

All the preserved plates of the shell are connected closely. The width of the complete carapace is estimated about 165 mm.

There is no preneural plate in our specimen, the anterior two neurals are hexagonal in form and with their narrower ends directed forward. Length of the first neural is 30 mm., and that of the second is 21.5 mm. which is about seventy per cent of the first one. The structure of the costals are usual, but that of the ribs are somewhat special, they are broad and greatly projected beyond the disk of carapace. The rib under the first costal is 18 mm. in width, and projects beyond the edge of the costal in 21.5 mm., and those of the second one's is in 14 mm. and 28.5 mm., furthermore, the rib under the third's, which is indicated only by its print and also 14 mm. in width, projects far beyond the edge of its costal about more than 30 mm. in measurement. There is no nuchal plate in preservation, but judging from the structure of the anterior edge of first neural and costal, it seems that the nuchal plate of our specimen may be very narrow, and takes an extent from side to side probably less than half the width of the carapace. The sculpture of the bones consists of rounded pits which about three to four in a line 10 mm. long.

Although the present specimen can be separated easily from genus *Aspideretes* by the absence of the preneural, but it is difficult still in determination between genera *Amyda* and *Platypeltis* because we do not know whether it bears eight or seven pairs of costal. According to the general structure showing by its preserved portion and the general geographical distribution of the mentioned two genera, it seems better to referred our specimen provisionally to *Amyda*.

Generally speaking, the new species appears somewhat similar to *A. johnsoni* of

Late Eocene from Inner Mongolia especially in view of the ornamentation on the surface of the carapace, but they differ distinctly in their size, *A. johnsoni* has a greatest width of its carapace in 390 mm., while that of our's is only about 165 mm.

In last year, a fossil anosteirine turtle, *Anosteira shantungensis,* found from the same locality and probably from the same bed as present specimen, had been described by Cheng, he considered his specimen as a remain of Late Eocene or Early Oligocene in age. The present writer agrees about this opinion, and regarded his soft-shelled turtle as a contemporary with anosteirine.

2. Specimen from Chekiang

Amyda sp.

The specimen here described includes all the costal plates except the last two of right side, and three posterior neurals. Cat. No. of IVPP V.1051. In observation of the natures of the small size, the lossely connected plates, and the strongly projecting rib ends, the specimen is apparently a young individual.

The disk of the carapace, which appears somewhat elliptical in form, is estimated about 54 mm. in length, and 41 mm. in width. All the ribs under the costals are protruded greatly beyond the edge of the carapace, among which the eighth one takes a protrusion greater than the transversal width of the corresponding costal, and that of the first and seventh ones are roughly equal, while those of the others are slightly shorter. The three preserved neurals, the 5th, 6th and 7th, are hexagonal in form and with their short-lateral sides anterior, among which the seventh is the longest and gradually decreases its breadth backwards. Judging from the structure of left eighth costal, it seems that there was originally an eighth neural in our specimen, and by which separated the proximal ends of last two costals from middle line. All the surface of the carapace are ornamented by fine pits and discontinous ridges except the margin where is smooth.

In 1934, Gilmore had described some fossil specimens of *Amyda* (*A. gregaria*) including juvenile and adult individuals from Middle Oligocene of Inner Mongolia. According to him some structures of the juvenile are markedly different from those of adult's. Therefore, though the specimen from Chekiang differs from Gilmore's juvenile and other species of *Amyda* in some sports, the writer does not like to make a new specific name for it immediately and waits for its adult forms in future.

According to the collecter, the present specimen was obtained from a bed called as Chuchiang Red Sandstone which was considered wholly by the geologists as Tertiary in age, for the present writer, the turtle-bearing stratum is probably deposits of Eo-Oligocene.

The present find is very interesting not only in its first occurrence of fossil turtle from Chekiang, but also in its youngest age of this genus found in China.



1. ?*Amyda linchuensis*, sp. nov. 正型标本背視 (Dorsal view of type). V.1050.×2/3.
2. *Amyda* sp. 背甲背視 (Dorsal view of carapace). V. 1051.×1.
3. 图 2 右側部分肋板放大，示凹斑和棱峭紋飾 (Part of right costals of fig. 2 enlarged, showing the sculpture of pits and ridges).×3.